

REMARKS

Claims 31-38 are now pending in this application. Claims 1-30 have been canceled, without prejudice or disclaimer of subject matter. Claims 31-38 have been added to provide Applicants with a more complete scope of protection. Claims 31 and 37 are in independent form.

Figs. 9 and 12 have been corrected as required at paragraph 4 of the Office Action. In addition, Figs. 12-18C have been designated by the label --PRIOR ART-- in response to the objection to the drawings as set out at paragraph 5 of the Office Action. Sheets of drawings including these changes are attached; these sheets replace the original sheets including Figs. 9 and 12-18C.

The title has been amended to make it more descriptive, as required in the Office Action.

Claim 27 was objected to at paragraph 7 of the Office Action. Cancellation of Claim 27 renders its objection moot.

Claims 1-6, 17, and 27 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite, for the reasons stated at paragraphs 8 and 9 of the Office Action. Claims 1-6, 17, and 27 were also rejected under 35 U.S.C. § 112, first paragraph, for lack of enabling disclosure, for the reasons stated at paragraphs 10 and 11 of the Office Action. First, cancellation of Claims 1-6, 17, and 27 renders the rejections of those claims moot. Second, the new claims (Claims 31-38) have been carefully drafted as deemed necessary to ensure that they conform fully to the requirements of Section 112,

first and second paragraphs, with special attention to the points raised in paragraphs 8-11 of the Office Action.

Claims 1-6, 17, and 27 were rejected under 35 U.S.C. § 103(a) as being obvious from U.S. Patent 6,477,201 to Wine et al. in view of U.S. Patent 5,825,927 to Boyce et al.

First, as mentioned above, cancellation of Claims 1-6, 17, and 27 renders the rejections of those claims moot.

Claim 31 is directed to an image processing apparatus for encoding image data indicating an image including a first region and a second region. An encoding unit is adapted to encode the image data at a first compression ratio to obtain first encoded image data, wherein the image data within the first region is encoded prior to the image data within the second region, the encoding unit terminating the encoding processing when the data amount of the first encoded image data exceeds a predetermined amount. A detecting unit is adapted to detect whether or not the encoded data corresponding to the second region is included in the first encoded image data. A control unit is adapted to make the encoding unit encode the image data at a second compression ratio higher than the first compression ratio to obtain second encoded image data, when the encoded data corresponding to the second region is not included in the first encoded image data.

Support for Claim 31 can be found in the original application, at least at Fig. 3, which shows a basic internal arrangement of the quantization step update unit 7. For example, the “first region” recited in Claim 31 corresponds to “inside the ROI” in that embodiment, the “second region” recited in Claim 31 corresponds to “outside the ROI” in

that embodiment, and the “compression ratio” recited in Claim 31 corresponds to “QP” or “QP_New” in that embodiment. It is of course to be understood that the references to various portions of the present application are by way of illustration and example only, and that the claims are not limited only to the details shown in the portions referred to.

Among the notable features of Claim 31 are that the image processing apparatus repeats the processing such that the image data is encoded at a predetermined compression ratio higher than the previous compression ratio when the encoded data corresponding to the second region is not included in the previously encoded image data, until the encoded data corresponding to the second region is included in the finally encoded image data to be outputted. By virtue of the features of Claim 31, the image processing apparatus can eliminate any deviation of the image data to be outputted.

Wine et al., as understood by Applicants, relates to content-adaptive compression encoding. A subjective evaluator delineates regions of an information space to be encoded in a qualitatively preferential or non-preferential manner such that the encoded information space comprises one or more of normal, emphasized, or de-emphasized information content. In Fig. 1, system 100 comprises a first presentation unit 10, an overlay generator 20, a subjective evaluator 30, a region association and flow calculation unit 40, an encoder 50, and an optional second presentation unit 60. The system 100 receives an information stream IN comprising a plurality of information frames, illustratively a video information stream. In response to a subjective evaluation of the relative value of the one or more intra-frame information regions within information stream IN, the system 100 encodes the information stream in a manner that selectively

enhances or degrades the one or more intra-frame information regions to produce an encoded output stream OUT.

Boyce et al., as understood by Applicants, relates to encoding video data. Fig. 3 illustrates a known encoder circuit 20. The compression circuit includes a discrete cosine transform (DCT) circuit 330 which receives the video bitstream to be compressed and performs discrete cosine transform coding operations thereon. The output of the DCT circuit 330 is coupled to the input of a quantization circuit 332. The quantization circuit 332 receives as a control signal an input from an MQQUANT selection circuit 334 where the value MQQUANT is used to control the quantization scale factor used during quantization. The MQQUANT selection circuit 334 is coupled to an output of the VLC circuit 28 and is responsible for selecting a quantization scale factor which will achieve the desired data rate as a function of the feedback information obtained from the VLC circuit 28. The quantized video signal output by the quantization circuit 332 is the compressed video signal that is supplied to the input of the VLC circuit 28 and the decompression circuit 29. (See column 2, lines 49-67, cited in the Office Action.)

Wine et al. and Boyce et al. apparently discuss controlling a quantization step upon encoding a movie. However, Applicants have found nothing in Wine et al. and Boyce et al., either separately or in any permissible combination (if any), that would teach or suggest encoding image data within a first region prior to image data within a second region, detecting whether or not the encoded data corresponding to the second region is included in an encoded image data, and encoding the image data at a predetermined compression ratio higher than a previous compression ratio when the encoded data

corresponding to the second region is not included in the encoded image data, as in Claim 31.

Accordingly, Applicants submit that Claim 31 is clearly allowable over Wine et al. and Boyce et al., either separately or in any permissible combination (if any).

Independent Claim 37 is a method claim corresponding to apparatus Claim 31, and is believed to be patentable for at least the same reasons as discussed above in connection with Claim 31.

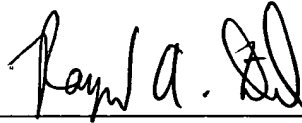
A review of the other art of record has failed to reveal anything which, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as references against the independent claims herein. Those claims are therefore believed patentable over the art of record.

The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration or reconsideration, as the case may be, of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Raymond A. DiPerna", is written over a horizontal line.

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